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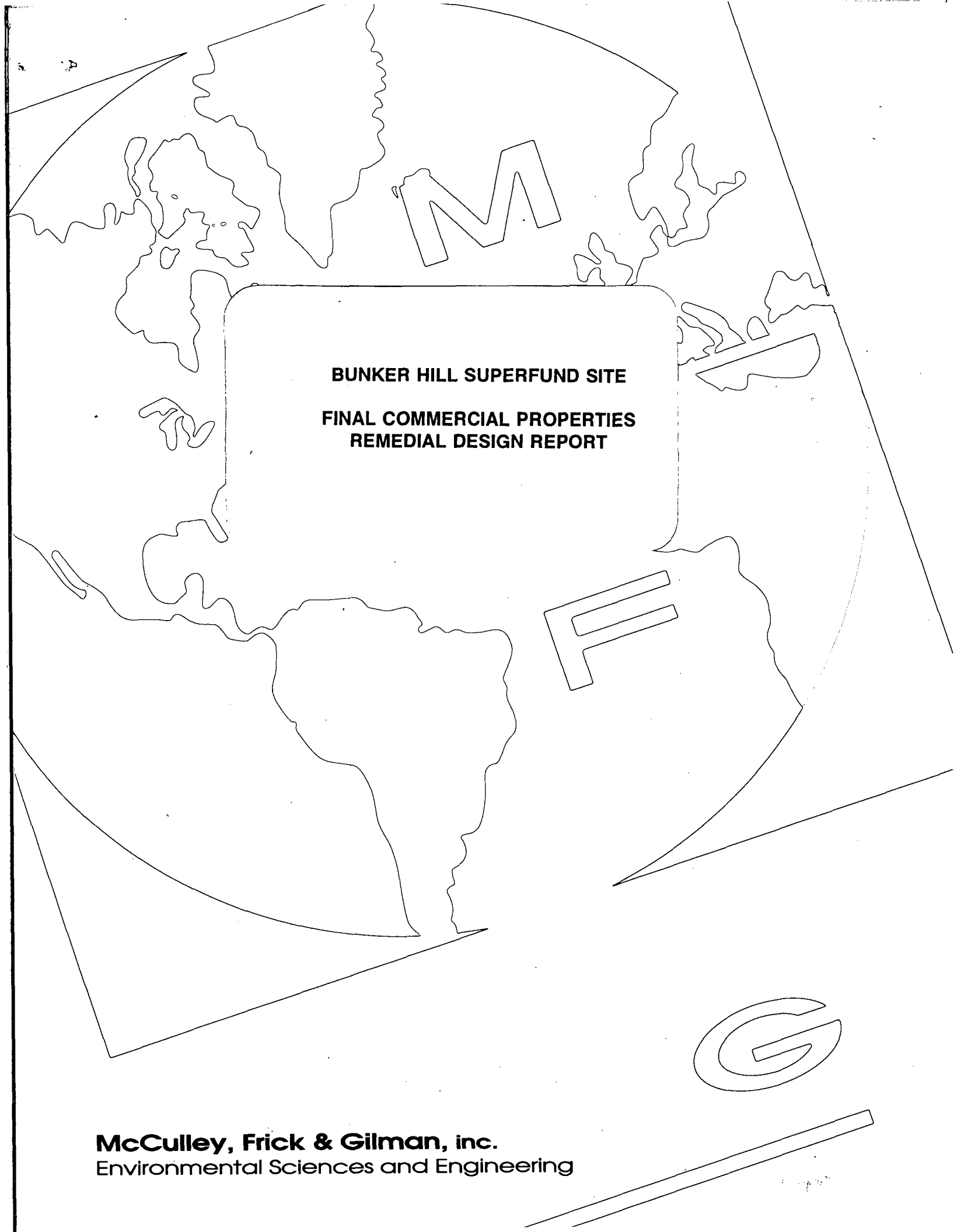
ATTACHMENT H -- FINAL
COMMERCIAL PROPERTIES RDR



BUNKER HILL SUPERFUND SITE

FINAL COMMERCIAL PROPERTIES REMEDIAL DESIGN REPORT

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Environmental Sciences and Engineering

BUNKER HILL SUPERFUND SITE

FINAL COMMERCIAL PROPERTIES REMEDIAL DESIGN REPORT

March 1994

Prepared For:

ASARCO INCORPORATED, HECLA MINING COMPANY, SUNSHINE MINING COMPANY

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1.0 INTRODUCTION

This Remedial Design Report (RDR) presents remedial designs to control direct contact risk and contaminant migration from commercial properties at the Bunker Hill Superfund Site (Site). This document clarifies and refines concepts outlined in the September 1992 Record of Decision (1992 ROD) and the Bunker Hill Remedial Design and Remedial Action Area I Statement of Work (SOW). Specifically, this RDR presents the technical analysis, design, and construction details necessary to develop the Commercial Properties Element of Work of Residential Areas Annual Remedial Action Work Plans (addressed below). Also presented is a summary of existing information pertinent to the designs for remediation of commercial properties and a discussion of operations and maintenance (O&M) considerations.

Commercial properties addressed by this RDR include only those within the boundaries of Area I as of December 31, 1993. Area I is shown on the Bunker Hill Site Allocation Map (Attachment C to the Consent Decree). In addition to commercial properties within the communities, Area I includes the following:

- the Old Lions Club Lease (Assessor Parcel No. 49N02E-35-6050);
- Linfor Lumber (County Assessor Parcel No. 49N02E-35-5610);
- the Theater Pit (County Assessor Parcel No. 49N02E-35-5605);

No other commercial properties will be remediated by the Settling Defendants. The work will be performed by the Settling Defendants pursuant to Residential Areas Annual Remedial Action Work Plans.

As described in greater detail in Section 7.0, these plans will be prepared each year to address remediation of residential yards, commercial properties, and rights-of-way, as well as water well closures, expected to be completed during that year's construction season.

1.1 OVERVIEW

Commercial properties present within Area I as of December 31, 1993, will be identified and categorized for remedial action based on the population which is the predominant user. Special attention will be given to those properties used predominantly by the sensitive population, defined as children 0 to 12 years of age and pregnant women. Surficial soils in commercial properties established after December 31, 1993 will be managed exclusively under the Institutional Controls Program (ICP) developed for the Site. Categories of properties that are addressed in this RDR include commercial and light industrial facilities, commercial lots (occupied or vacant), public buildings, parks, and churches. Remediation will occur at commercial properties with lead concentrations of 1,000 ppm or greater in the top 6 or 12 inches of soil, depending upon land use. Decisions for remediation will be based on existing information or future sampling to be conducted during implementation of the Annual Remedial Action Work Plans. In general, the remedial action will consist of protective barrier placement.

Specific components of this document address the following issues:

- Identification of commercial property types within Area I that require remedial action;
- Identification of appropriate remedial designs that are consistent with the 1992 ROD, the Performance Standards outlined in the Consent Decree SOW, and, where appropriate, the 1991 ROD for residential yards.
- Description of specific criteria and procedures for implementation of the remedial designs.

1.2 PERFORMANCE OBJECTIVES AND STANDARDS

The performance objectives for commercial properties are to control direct contact risk and the migration of contaminants originating from commercial properties. These objectives will be met through the primary Performance Standard which requires placement of a protective barrier where the top 6 or 12 inches of commercial property soils contain lead concentrations equal to or exceeding 1,000 ppm. Sampling of commercial properties to determine if the 1,000 ppm lead Performance Standard has been exceeded shall be conducted as described in Section 3.1 of this RDR.

Specific Performance Standards for the Commercial Properties Element of Work are as follows:

- For commercial properties located within Area I, as defined by the Site Allocation Map, surface soils with a lead concentration of 1,000 ppm or greater in the top six or twelve inches must receive a protective barrier. Sampling depth and resultant barrier thickness will be dependent on type of land use. Barriers shall consist of a minimum of six inches of clean soils and revegetation, six inches of gravel, or a paved surface consistent with land use.

- Barriers installed for commercial properties used predominantly by sensitive populations, or commercial properties with unrestricted access from adjacent residential property, shall meet the requirements of the Residential Yards RDR, or be consistent with the setting and acceptable to EPA.

- Commercial properties with lead concentrations of 1,000 ppm or greater in the 12- to 18-inch interval used predominantly by sensitive populations or with unrestricted access from adjacent residential properties and with a high probability of disturbance shall receive a visual marker prior to placement of the 12-inch barrier.

- Commercial properties not predominantly used by sensitive populations or those with restricted access from adjacent residential properties will be sampled at the 0- to 1-, 1- to 6-, and 6- to 12-inch intervals for determination of the lead concentration. All other commercial properties within Area I shall be sampled consistent with

the Residential Yards RDR. Sample collection and analysis will be conducted consistent with Appendix B of the Residential Yards RDR.

- Excavated soils shall be consolidated within the Page Pond Repository or other areas approved by EPA in consultations with the State.

- Remediation of the Kellogg High School practice field, identified separately on the Allocation Map, shall include soil and sod removal and replacement for concentrations exceeding 1,000 ppm lead, up to a maximum removal depth of 6 inches. Removal depths will be based upon the results of the sampling program defined specifically for the practice fields in the Commercial Properties RDR.

- The exact nature of each commercial property remediation shall be determined on a case-by-case basis through the process outlined in the Commercial Properties RDR.

An additional design criterion for remediation of commercial properties is the successful establishment of vegetation where seeding has occurred. This criterion requires the reseeding of areas not achieving 85 percent cover in three years.

2.0 TECHNICAL ANALYSIS

This section presents an overview of the remedy for Area I commercial properties and provides discussion of related previous studies and remedial activities. An overview of remedies identified for commercial properties is provided in Section 2.1. Previous Site sampling and remedial activities related to commercial properties are briefly summarized in Section 2.2.

2.1 REMEDY OVERVIEW

For the purposes of this RDR, a Type 1 commercial property is defined as a commercial property predominantly used by the sensitive population (children 0 to 12 years of age and pregnant women) or with unrestricted access from an adjacent residential property or properties. Type 1 commercial properties include, but may not be limited to, all day care facilities and playgrounds. Type 2 commercial properties are defined as those properties not predominantly used by the sensitive population and also those properties that are restricted in terms of access from adjacent residential property. Fencing a commercial property that is adjacent to residential property and is not predominantly utilized by the sensitive population is an acceptable remedial action and can result in the classification of a commercial property as Type 2. Examples of Type 2 properties include:

- Storage area behind/next to a business;
- Parking area for equipment and supply vendor personnel (e.g., hardware store, gas station, medical services, recreational vehicle sales and rental, car sales lot, etc.);
- Vacant lots, if not adjacent to a residential property;
- Customer parking for businesses (e.g., hardware store, gas station, medical services, recreational vehicle sales and rental, car sales lot, etc.);
- Parking for businesses without public access (WWP yard, GTE yard, and other types of utilities); and

- Large lots such as parks, ball fields, and church yards, or portions of these areas that are not predominantly used by the sensitive population or are restricted in terms of access from adjacent residential property, may also be included in the Type 2 property category.

Type 1 commercial properties will receive a barrier consistent with the Residential Yards RDR, or another barrier type consistent with the setting and acceptable to EPA. Existing soils will be removed, as necessary, prior to barrier installation. As previously discussed, contaminated soils will be consolidated in the Page Pond repository or other area approved by EPA in consultations with the State. Type 2 commercial properties will receive a barrier consisting of six inches of clean soil with revegetation, six inches of gravel, or a paved surface. In some instances, excavation of existing soils may be necessary to maintain grade or drainage requirements or to comply with FEMA guidelines. The excavated soils will be handled as described above. Installation of a barrier between humans and contaminated soils will provide protection from exposure through the control of contaminant migration and direct contact risk, thereby meeting the performance objectives for commercial properties.

2.2 PREVIOUS STUDIES/ACTIONS

Selected commercial properties were sampled and, in some cases, remediated under several programs conducted at the Site. These programs include the 1986 Fast Track program; the Phase II RI for Populated Areas; and actions associated with the 1991 and 1992 Administrative Orders on Consent (AOCs). Available information regarding these sampling and/or remediation programs is assessed in this section in terms of their acceptability toward meeting the Performance Standards presented in Section 1.2.

FAST TRACK

In 1986, certain locations in the populated areas of Smelterville, Kellogg, and Wardner were sampled as part of an emergency "Fast Track" removal program. Barrier treatments were applied to several commercial properties. The extent of excavation prior to barrier placement was specified on a site-by-site basis, but such excavation typically extended to a depth of six inches below ground surface. This depth was determined to be the minimum thickness needed to provide a sufficiently durable barrier and to facilitate the growth of new grass (E&E, 1989).

The sites remediated under the 1986 Fast Track program can be divided into commercial properties and rights-of-way. The following is a list of commercial property sites believed to be addressed during the 1986 Fast Track program:

- Teeters Field (the city baseball field), Kellogg
- Memorial Park Little League field, Kellogg
- Riverside Park playground area, Kellogg
- Gold Street Park playground area, Kellogg
- Silver King School asphalt playground area, Smelterville
- City Park (west end - barren), Smelterville
- Old Wardner School parking lot and ball field, Wardner

In some cases, the barriers installed under the 1986 Fast Track removal program do not comply with the standards outlined in the 1992 ROD or the SOW for the Consent Decree. In addition, it is possible that recontamination may have occurred from airborne materials and from community infrastructure repairs since the time when Fast Track activities were conducted. Therefore, the previous (1986) actions are not assumed to meet the current Performance Standards for commercial properties. The sampling results from the 1986 Fast Track activities are, similarly, not assumed to meet the current Performance Standards because of the elapsed time and corresponding possibility of recontamination. The Fast Track commercial properties within Area I will be included in future sampling programs.

PHASE II RI

The Phase II RI for Populated Areas included the sampling of 89 commercial properties within the populated areas of the Site (CH2M Hill, 1990). Where possible, samples were collected from the 0- to 1-inch, 1- to 6-inch, and 6- to 12-inch depth increments at each property. These properties were divided into zones showing the extent of contamination based on sample results and the potential transport/exposure routes. The sampling program that characterized the zones was performed under an agreement of confidentiality with the property owners. The Idaho Department of Health and Welfare (IDHW) has made contact with the property owners in an effort to receive their permission to release the information. Results from this effort currently are available from IDHW.

During the preparation of Residential Areas Annual Remedial Action Work Plans, available sampling data from the Phase II RI will be reviewed and a determination made as to the usefulness of these data for commercial property remediation using the designs set forth in this RDR. If the available sampling results do not allow a determination that remediation will occur consistent with requirements of the applicable Performance Standards, the Area I properties in question will be included in future sampling programs.

1991 and 1992 AOC Actions

Pursuant to a July 1991 AOC, EPA requested certain early remedial action to control fugitive dust emissions at the Bunker Hill Site. Site reconnaissance, followed by a soil sampling program in the spring of 1991, yielded the locations targeted for dust control in 1991 and 1992 pursuant to the AOC. Commercial properties were sampled under the AOC to characterize lead concentrations in the 0- to 2-inch depth interval.

Commercial properties with lead concentrations greater than 2,000 ppm in the upper two inches of surface material were selected to receive dust control measures. These measures were considered to be either temporary or final. Records describing the exact nature, extent, and type of barrier placement for all individual properties are not currently available.

During the preparation of Residential Areas Annual Remedial Action Work Plans, any properties within Area I remediated under an AOC will be investigated to assess the adequacy of current barrier protection. Resampling will be required in most instances because samples collected under an AOC were taken only from the 0- to 2-inch depth increment. Exceptions to this are commercial properties used predominantly by non-sensitive populations where the placed barrier materials are a minimum of six inches thick. For commercial properties used predominantly by sensitive populations, sample results from activities conducted under an AOC will not be used to establish the need for remedial action.

3.0 DESIGN

This section describes the process through which remediation decisions will proceed for commercial properties present within Area I as of December 31, 1993. The discussions address the following steps in the process:

- sample collection and evaluation of results;
- site assessment and selection;
- establishment of a collective agreement between the property owner, the Settling Defendants, IDHW, and/or EPA;
- location of buried utilities;
- preparation of a Site plan, with photo documentation; and
- selection of remedial actions required to meet the applicable Performance Standards.

As previously described (Section 2.1), commercial properties within Area I are defined as either Type 1 (use or unrestricted access by members of the sensitive population) or as Type 2 (other commercial properties). Each Draft Residential Areas Annual Remedial Action Work Plan will delineate commercial properties as either Type 1 or Type 2 and the proposed material specifications for those commercial properties to be remediated during the corresponding construction season. EPA and/or IDHW will have the opportunity to review these delineations prior to remediation, and to comment, as necessary, as part of the Work Plan review process. The barrier selected for each type of commercial property will meet the applicable Performance Standards, will be established in consultation with the property owner, and will generally be similar to the type of material in place at the time of remediation.

3.1 SAMPLE COLLECTION AND EVALUATION OF RESULTS

This section provides general soil sample collection procedures that will be used to determine which commercial properties exhibit lead concentrations of 1,000 ppm or greater in the 0- to 1-inch, 1- to 6-inch, or 6- to 12-inch depths for Type 1 and 2 properties. The 12- to 18-inch depth samples for Type 1 properties will also be assessed. The 0- to 1-inch, 1- to 6-inch, and 6- to 12-inch samples are the intervals which determine the need for remediation at Type 1 properties, while the 0- to 1-inch and 1- to 6-inch samples serve as the determining intervals for Type 2 properties (see Section 3.6). The 6- to 12-inch sample results for Type 2 properties and the 12- to 18-inch sample results for Type 1 properties will be obtained for ICP documentation and, in the case of Type 1 properties, to determine the need for visual marker placement. As previously noted, sample results, combined with the categorization of a property as Type 1 or 2, will be used to establish the required remedial action for each commercial property.

Previously sampled and/or remediated commercial properties within Area I will be evaluated for conformance with the Performance Standards set forth in Section 1.2 of this RDR. Each of the remediated properties found to be in conformance with the barrier requirements of this RDR will be visually inspected for indications of disturbance of the barrier or evidence of recontamination. All previously remediated commercial properties in Area I that were not remediated in conformance with the requirements of this RDR, or those which show indications of barrier disturbance or recontamination, will be resampled and remediated as necessary using the methods prescribed herein. Sampling results from previous studies will also be evaluated for conformance with the current requirements. These results may be utilized for remediation determinations if they meet the Performance Standards and, through deliberation with IDHW, are considered recent enough to be representative of current conditions.

If existing sample results from the 1991 and 1992 AOC sampling programs for a non-remediated Type 2 commercial property are 1,000 ppm lead or greater, the property will not require additional sample collection but will require placement of a barrier, as prescribed in Section 3.6.2. However, if remediation has occurred, that property will require verification that the existing barrier meets the applicable standards. If the AOC sample results for such an area are less than 1,000 ppm lead, the area will be resampled in the 0- to 1-inch, 1- to 6-inch, and 6- to 12-inch depth increments.

No sampling will be required in areas that obviously contain contaminant levels above 1,000 ppm lead. These areas include locations where the planned sampling intervals consist of visually identifiable tailings or mine waste rock, or where adjacent properties or areas provide strong indicators of the presence of such material. In these cases, remedial action automatically will be performed according to the categorization as a Type 1 or Type 2 commercial property. The assumption of contamination and resulting remedial action taken will be recorded for ICP documentation.

For commercial properties with open areas up to 4,000 ft^2 in size, the sampling frequency will be one composite sample per property; subsamples for the composite will be collected at one location per 500 ft^2 of open area. Subsamples collected for each composite will consist of material within the appropriate like depths. There will be a minimum of two and up to eight subsample locations per composite. For commercial properties with open areas 4,000 ft^2 and larger in size, there will be one composite per 1/2 acre of open area with eight subsample locations for each composite. Subsamples collected for each composite will consist of material within the appropriate like depths.

Composite samples will be analyzed for lead in accordance with the analytical procedures described in the Sampling and Analysis Plan (SAP) attached as Appendix B to the Residential Yards RDR.

The referenced Sampling and Analysis Plan also contains specific details and procedures for sample collection.

Evaluation of the data will result in elimination of sites from consideration for remedial action if lead concentrations are less than 1,000 ppm for the determining sample intervals. Those sites with lead concentrations of 1,000 ppm or greater will require remedial action, as specified in Section 3.6. If commercial property soil lead levels in the 0- to 1-, 1- to 6-, or 6- to 12-inch interval are between 900 and 1,000 ppm and the property owner requests a resample, then the EPA/IDHW will resample the area in question in accordance with Appendix B of the Residential Yards RDR. All sampling results will be provided to the administrators of the ICP for inclusion in their database.

3.1.1 Kellogg High School Playing Fields

A specific sampling protocol has been developed for the Kellogg High School playing fields due to their location away from residential areas and their elevated position with respect to the valley floor flood plain where tailings typically are found. Composite soil samples will be collected for every 10,000 ft^2 of playing field. Each 10,000 ft^2 area will be divided into four 2,500 ft^2 areas. Subsamples for the composites will be collected from each of these 2,500 ft^2 areas. The subsamples will be taken from the 0- to 1-inch, 1- to 2-inch, 2- to 3-inch, and 3- to 6-inch depth increments. Material from the appropriate like depths will be combined to form four composite samples for the 10,000 ft^2 area that is representative of the depth intervals noted above.

3.2 SITE ASSESSMENT AND SELECTION

Commercial properties will be selected for remediation as follows:

1. Each Residential Areas Annual Remedial Action Work Plan will specify those Area I commercial properties to be

sampled during the corresponding construction season, and the category in which each of those commercial properties falls (i.e., Type 1 or Type 2). Sampling will be conducted on a block-by-block basis as outlined in the SAP in Appendix B of the Residential Yards RDR. Properties will be selected for remediation if the corresponding soil samples equal or exceed 1,000 ppm lead, as discussed in Section 1.2.

2. Each Residential Areas Annual Remedial Action Work Plan will specify commercial properties to be remediated during the corresponding construction season, based on sample information collected during the previous year. Remediation will be performed on an area-by-area basis. The property must be within the areas scheduled for remediation during that construction season. The construction season is considered to be from June 15 to mid October, barring unusual weather.

3. The property owner (and tenant, if applicable), shall have entered into a collective agreement that allows representatives of EPA, IDHW, Panhandle Health District (PHD), and the Settling Defendants access for entry, sampling, removal of lead-bearing materials from property, and remediation. The agreement will also provide for access for cap maintenance and inspection activities by the Settling Defendants through the following construction season. Access for PHD, EPA and IDHW for future audits to evaluate cap integrity will also be addressed in the access agreement.

3.3 COLLECTIVE AGREEMENT

The collective agreements among the property owners, Settling Defendants, and IDHW, EPA, or their designee, including access agreements, will be completed prior to starting remediation activities and copies will be provided to each party. These agreements will include a definition of the type of remediation to be conducted at each commercial property. Site specific features for each commercial property will be identified and collectively agreed upon by the above-mentioned parties and, where applicable, will include the following:

- Access to the commercial properties by contractor work crews;

- Requests that owners/tenants and visitors limit travel through work areas and that children and pets are also kept out of work areas during remediation;
- Excavation limits;
- Plants to remain;
- Cultural features to be removed by the owner;
- Cultural features to be removed by the contractor;
- On-site access to water;
- Removal or relocation of utilities and subsurface obstacles in the way of the remediation efforts;
- Prudent care of the new vegetation and long-term requirements for established vegetation by the property owner;
- A list of asset damage that exists prior to remediation work being conducted;
- Special items of concern collectively agreed upon by the Settling Defendants, EPA, and/or IDHW and the homeowners;
- Commercial Properties Warranty (see Appendix A);
- Maintenance obligations of the property owner required by the ICP; and
- Estimated schedule for remediation.

The overall schedule for remediation of residential yards will control the schedule for commercial property remediation. Once collective agreements are completed, the remediation contractor representatives will schedule a group of residential and commercial properties located within the same vicinity, street or community, to be prepared for remediation. Scheduling groups of residential and commercial properties together for remediation is necessary to limit disruption of a community and fugitive dust from trucks traveling through the streets, and because safety concerns associated with transportation.

3.4 UTILITIES LOCATION

The remediation contractor will arrange with the local utility companies to visit each scheduled commercial property and locate electrical, water, sewer, gas, cable, and phone lines. The utility company will be requested to mark these utilities on the ground with colored spray paint. The owner/tenant will be notified of this site visit and asked to participate, if needed, to provide information on subsurface obstacles such as septic systems and abandoned lines. The remediation contractor will scan each yard for visible obstacles, and may utilize an electromagnetic detector if there is reason to suspect buried obstructions have not been marked (i.e., sprinkler systems). Locations of subsurface obstacles will be confirmed by the remediation contractor, if necessary, by hand digging to trace the orientation of the obstacle and to mark it adequately with spray paint. The type and location of the obstacle will be placed on the Site plan, which will be issued to all work crews prior to remediation startup.

3.5 SITE PLAN & PHOTO DOCUMENTATION

The remediation contractor will develop a plan for each commercial property that will record all site-specific items identified in the access agreements. The site plan will map out areas for remediation, known caution zones with subsurface obstacles, and all utility locations that were marked during prior site assessment tasks.

The site plan will include a scale drawing that will record each commercial property's planned and actual remediation, including the following:

- Total depth of soils, gravel, and/or sod excavated on each site;
- Ingress and egress areas;
- Conditions of the existing area including drainage problems, its structures and placement of cultural items;

- Location of fences, approximate location of property boundaries, and demarcation stakes;
- Special instructions for field work crews, if any;
- Soil sampling data;
- Limits of excavation;
- Trees, shrubs, plants and landscaping to remain or be removed;
- Results of field verification program for barrier thickness; and
- Need for and placement of a visual barrier.

The site plan will be used as a record for site-specific conditions that warranted such actions and all remediation activities that were completed at each commercial property. The site plan will be signed by the Settling Defendants' representative, the owner/tenant, and the EPA and/or IDHW representative both before work is commenced and at its completion, signifying acceptance by all parties. Prior to final sign off by the parties, the site plan will be revised to show actual work performed. The site plan will provide a detailed record of the remedial action planning efforts as well as the completed remedial action. The completed site plan, signed by the Settling Defendants' Project Coordinator, is necessary for each remediated commercial property within a Reasonably Segregable Area in order to achieve certification.

Photo documentation, by still photographs and/or videotapes, will be used to record pre-remediation and post-remediation conditions of yards, streets, alleys, and side walks. The site plans and photo documentation will be provided to the ICP for use in the tracking system. In addition, a copy of the completed and approved site plan will be provided to the property owner. The photo documentation will become a portion of the permanent record for each property. In the event a dispute arises between the remediation contractor or the Settling Defendants and owners/tenants or local governments, the photo documentation will

be used to substantiate any claims. If these parties cannot resolve the dispute, a final decision will be made by a three-member Arbitration Panel consisting of one representative each from 1) EPA or the State of Idaho; 2) the Settling Defendants, and 3) a local government in the Silver Valley. This procedure will be similar to that described in Appendix F of the Residential Yards RDR.

3.6 REQUIRED REMEDIAL ACTION

As stated previously, the required remedial action for a given commercial property will be based on its categorization as a Type 1 or Type 2 property and the lead concentrations in its soils. The following text describes the process through which the required remedial action will be established. Table 3-1 specifically addresses the determination of barrier thickness for Type 1 and Type 2 commercial properties. Figure 3-1 presents a decision matrix for the assessment of Type 2 commercial properties sampled and/or remediated under an AOC. The types of remediation to be implemented and barriers installed will be consistent with land use considerations or remedial activities occurring in surrounding areas.

3.6.1 Type 1 Commercial Properties

Barrier installation for Type 1 commercial properties will be conducted according to guidelines set forth in the Residential Yards RDR, as summarized below. For these types of properties, the remedial action will ensure that a minimum 12-inch barrier exists over soils with lead concentrations of 1,000 ppm or more.

For each Type 1 property in Area I with 1,000 ppm lead or greater in the 0- to 1-inch and/or the 1- to 6-inch depth increment composite samples, but less than 1,000 ppm lead in the 6- to 12-inch depth, one of the following remedial actions will be prescribed:

- Removal of the top six inches of material, followed by placement of six inches of an appropriate barrier material; or

- Placement of a visual marker (consisting of geofabric or other suitable material) on the existing material surface, if future disturbance of the barrier is likely, followed by 12 inches of an appropriate barrier material.

If sampling results for a given Type 1 property show 1,000 ppm lead or greater in the 6- to 12-inch depth, but less than 1,000 ppm lead in the 0- to 1-inch and 1- to 6-inch depths, one of the following remedial actions will be prescribed:

- Placement of six inches of an appropriate barrier material; or

- Removal of 12 inches of material, followed by placement of 12 inches of an appropriate barrier material. A visual marker will be installed prior to placement of 12 inches of an appropriate barrier material if the 12- to 18-inch sample is greater than or equal to 1,000 ppm lead.

If sampling results for a given Type 1 property show lead concentrations of 1,000 ppm or greater in the 0- to 1-inch and/or 1- to 6-inch and the 6- to 12-inch depth increments, one of the following remedial actions will be prescribed:

- Placement of a visual marker on the existing material surface, followed by 12 inches of an appropriate barrier material; or

- Removal of 12 inches of material, followed by placement of 12 inches of an appropriate barrier material. A visual marker will be installed prior to placement of 12 inches of an appropriate barrier material if the 12- to 18-inch sample is greater than or equal to 1,000 ppm lead.

Increment samples from the 12- to 18-inch depth will be collected for Type 1 commercial properties for ICP documentation.

3.6.2 Type 2 Commercial Properties

For each Type 2 property in Area I with 1,000 ppm lead or greater in the 0- to 1-inch and/or the 1- to 6-inch depth increment composite samples, the following remedial action will be prescribed:

- Removal of six inches of material, followed by placement of six inches of an appropriate barrier material. A visual marker will be placed prior to placement of six inches of an appropriate barrier material if the 6- to 12-inch sample is equal to or greater than 1,000 ppm lead.

As previously stated, additional sampling is not required for unremediated Type 2 commercial properties with lead concentrations of 1,000 ppm or greater in the top 2 inches, as determined by previous AOC sampling. Instead, the property will automatically receive a 6-inch barrier, if none exists, or will require verification that any existing barrier meets the Performance Standard. For all other Type 2 commercial properties, the 6- to 12-inch depth increment samples will be collected for ICP documentation. If the 6- to 12-inch depth sample results show lead concentrations greater than or equal to 1,000 ppm, a visual marker (e.g., geofabric or other suitable material) may be installed in selected Type 2 commercial properties prior to backfilling. Such placement will be considered on a case-by-case basis.

3.6.2.1 Kellogg High School Playing Fields and White's Buffalo RV Park

The Kellogg High School playing fields and certain rock-covered portions of the White's Buffalo RV Park comprise Type 2 commercial properties for which specific remediation requirements have been agreed upon. As previously noted, the playing fields are located away from residential areas and at an elevation above areas potentially affected by flooding and associated tailings deposition on the valley floor. The playing fields will be sampled using the

specific protocol presented in Section 3.1.1. Remediation of the playing fields will include soil removal/replacement, only as deep as necessary to remove those soils that contain lead concentrations of 1,000 ppm or more. For example, if only the upper one inch of the soil horizon exceeds the lead Performance Standard, only one inch of soil will be removed and replaced. Consistent with the established Type 2 commercial properties remediation protocol, removal/replacement activities will not extend beyond a depth of six inches at the Kellogg High School playing fields.

White's Buffalo RV Park is located on the north side of the valley floor just west of the Silver Valley Truck Stop. Portions of the R.V. Park previously have been remediated through placement of a rock barrier comprised of waste rock from the Sunshine Mine. However, this waste rock does not meet the chemical specifications for rock barrier material presented in Section 3.6.3. Therefore, although not part of Area I, the R.V. Park will be re-remediated by the Settling Defendants. Early remediation of the recreational vehicle parking and potential play areas currently covered with Sunshine Mine waste rock will occur. Such remediation will be implemented using the methods prescribed herein. However, the drive-in theater portion of the property will not be re-remediated until the North Kellogg Reasonably Segregable Area is remediated. At that time, the drive-in theater area will receive either a Type 1 or a Type 2 barrier, depending on its use. If the property is being used as a commercial property, all necessary construction work must previously have been completed by the owner in accordance with ICP requirements. If the property is not being used at that time, it will be re-remediated by installing a barrier of clean soil or rock over the existing material.

3.6.2.2 Fenced Areas Near Gondola Base

Although not included in Area I, currently unremediated properties near the Gondola base will be limited in access from nearby residential and commercial properties through placement of a six-foot chain link fence. The placement of the fence will

coincide with the delineations noted on the Allocation Map. The exact fence location will be based upon the county tax assessor's parcel boundaries. Access points for property owners will be provided in the fencing at key locations where the properties abut Bunker Avenue.

3.6.3 Barrier Types

Clean soil, rock, and asphalt/concrete are the primary types of barrier materials that will be used to remediate Area I commercial properties. Vegetation will be established in conjunction with placement of clean soil. Concrete or asphalt will be considered on a site-specific basis, at the option of the Settling Defendants. The thickness of asphalt or concrete application will be based on guidelines set forth in the ICP. The options available and their application with regard to traffic and use are described below, followed by descriptions of clean soil, rock barrier materials, and revegetation (on clean soil).

<u>None to very light vehicular traffic (storage area):</u>

- Clean soil application and vegetation establishment; (applicable only if traffic is slow and intermittent).

<u>Light to heavy vehicular traffic:</u>

- Rock barrier or possibly asphalt/concrete.

<u>Light to moderate pedestrian traffic:</u>

- Clean soil distribution (depth or thickness to be a site-specific determination) and establishment of vegetation (hydroseed or sod). An example of this type of use would be a walking/jogging trail or path. This type of land use may require a compacted sub-base.

<u>Moderate to heavy pedestrian traffic:</u>

- Distribution of clean soil (depth or thickness to be a site-specific determination) and establishment of vegetation (hydroseed or sod).

- Distribution of rock barrier (depth or thickness to be a site-specific determination).

Many of the sites defined as commercial properties are privately owned. Therefore, and as appropriate, each property owner will be provided the opportunity to consult on the use of the property and the barrier type (clean soil or rock), based on the above traffic categories. Barrier durability for the intended property use is the key element in barrier type selection. Barriers will be similar to the material currently at the property and will not involve large scale upgrades such as extensive paving. If the owner wishes to upgrade the barrier type (such as paving), the Settling Defendants will be responsible only for that portion of the cost of a barrier conforming with the requirements set forth in this RDR. As noted in the Commercial Properties Warranty (Appendix A), all installed barriers will be guaranteed by the Settling Defendants for one year with regard to new vegetation and for two years with regard to positive drainage characteristics. These aspects of the Commercial Properties Warranty will be intrinsic to each collective agreement. Any damaged vegetation, barrier breaches, or erosion problems that are attributable to the land-use practices of the owner/tenant, and not to the installation of the barrier, will not be repaired by the Settling Defendants.

Clean Soil

Possible sources of acceptable clean soil materials include topsoil from nearby areas and overburden from construction sites or other off-site sources.

Any soils used for commercial property remediation will be required to meet the specifications for lead, arsenic, and cadmium presented below. Sampling for compliance with the concentration requirements will be the same as for clean soil for residential yard remediation activities (see Appendix B of the Residential Yards RDR). A comprehensive sampling program will be conducted for all barrier materials. In summary, this program consists of collecting a sample for every 200 cubic yards of barrier material, and one duplicate quality assurance sample for every ten barrier samples. Clean soil, upon which vegetation will be established,

will meet the same specifications as for residential yard backfill (i.e., less than 100 ppm lead, 100 ppm arsenic, and 5 ppm cadmium based on the average of sampling results, with no individual sample exceeding 150 ppm lead).

Revegetation

Vegetation types for a given commercial property will be established through consultation with the property owner. Type 1 commercial properties where sod currently exists will generally be sodded after placement of clean soil. In most Type 2 properties without sod, revegetation activities will generally be limited to seeding. For Type 2 commercial properties where sod currently exists and which will receive immediate use after remediation, sodding will occur rather than seeding.

A mixture of grasses, primarily consisting of red top, but also including timothy, orchard grass, and Canada blue grass, will be used in areas requiring seeding. The mixture will be applied at an approximate rate of 20 pounds Pure Live Seed per acre. Fertilizer and mulch, when required, will be applied at a rate of 400 pounds per acre and 1,000 pounds per acre, respectively. This application rate may also be varied depending on site-specific conditions. Seed certification will be required to ensure that the grass seed used does not create a weed problem in nearby residential properties.

In areas where seeding occurs, a cover of 85 percent within three years is expected. In areas where this is not achieved, reseeding by the Settling Defendants will occur if problems in achieving the cover criterion are not related to the owner's/tenant's land-use practices.

Rock Barrier Material

Rock is an appropriate material for areas where a more durable barrier is required or where surface conditions are not amenable to

revegetation. Such areas generally include parking lots and storage areas associated with commercial properties.

Rock barrier material may consist of one or a combination of the following materials: mine waste rock, quarry rock, or gravel. Factors that determine the type of rock barrier material to be used include:

- commercial property location relative to residential properties;
- commercial property land use/existing material type; and
- availability of the various rock barrier material types.

Rock used as barrier material will meet the same specifications as for clean soil (i.e., less than 100 ppm lead, 100 ppm arsenic, and 5 ppm cadmium based on the arithmetic mean of sampling results, with no individual sample exceeding 150 ppm lead). The following table shows the typical material size in relation to the planned use. For general rock barrier material, the required gradation is median size (D_{50}) equal to approximately 1.5 inches, with no individual particle exceeding 3 inches in diameter. In circumstances where larger-sized material is used (based on a consensus by the Settling Defendants, the owner/tenant, and IDHW or EPA), rolling may be required to ensure the integrity of the barrier. Rock barrier material will be screened, as required, to approximate the appropriate particle size distribution.

RECOMMENDED ROCK BARRIER SIZE

USE	SIZE
Road base material	No rock larger than 4"
Road surface material	No rock larger than .75", with no more than 16% fines (passing No. 200 mesh)
General barrier	D_{50} = 1.5", no rock larger than 3"

4.0 CONSTRUCTION

This section addresses the general construction procedures necessary to implement the remedial designs presented in Section 3.0. This section also addresses scheduling for completion of the various treatments.

4.1 REMOVAL AND REPLACEMENT

In certain situations, existing material may require removal to a specified depth prior to placement of rock barrier material or clean soil because of grade, setting, drainage requirements, and/or FEMA requirements. The removed contaminated materials will be handled and/or disposed in a manner consistent with methods described in the Residential Yards RDR. Disposal will occur in the Page Pond Repository or other area approved by EPA in consultations with the State. If materials are encountered which would have lead concentrations in excess of mine waste rock or tailings, they will be transported to an approved location in the Smelter Complex.

4.2 PLACEMENT OF CLEAN SOIL

Clean soil from acceptable sources, as described in Section 3.6.3, will be transported by truck to commercial properties that require a clean soil barrier. At each target property the soil will be spread by bulldozer or other suitable means to the specified 6- or 12-inch thickness. The clean soil will be placed in a single 6- or 12-inch lift. The thickness of the finished clean soil cover will be verified using methods that are consistent with those presented in Appendix E of the Residential Yards RDR. Dust control during transportation and application, if necessary, will be accomplished by wetting the application site using a water truck.

4.3 REVEGETATION

Areas that can acceptably be revegetated by seeding (i.e., most Type 2 commercial properties) will be planted by seeding mechanical means using the materials and rates specified in Section 3.6.3. Seeding will take place in the late spring or fall. Experience in other parts of the Site indicates that seeds distributed in the late fall will remain dormant until the early spring, when germination occurs. Sod will be used to revegetate Type 1 commercial properties and certain Type 2 commercial properties where immediate vegetation is necessary to protect the barrier.

Areas that have been reseeded will be inspected by the Settling Defendants after one year to characterize progress toward achievement of the 85 percent cover criterion. If this criterion has been achieved, no additional inspections will occur and maintenance of the revegetated areas will become the responsibility of the owner/tenant. If the 85 percent cover criterion has not been achieved, the Settling Defendants will inspect the revegetated areas once per year for the next two years, or until the criterion has been achieved. If, after three years following reseeding, the 85 percent cover criterion has not been achieved, the Settling Defendants will reseed the area or take other appropriate measures. If weeds are observed in reseeded areas prior to attainment of the cover criterion, they will be eliminated by the Settling Defendants. After attainment of the cover criterion, weed elimination will be the responsibility of the owner/tenant.

Areas assess to exhibit excessive erosion that is not attributable to owner/tenant land-use practices will be mitigated using additional vegetation, runon/runoff controls, or selective placement of rock barrier material. The selection of erosion control measures will be site-specific.

4.4 PLACEMENT OF ROCK BARRIER MATERIAL

Rock barrier material will be transported by truck to commercial properties that require a rock barrier. At each target property the rock will be spread by bulldozer, or other suitable means such as motor-grader, to the specified 6- or 12-inch thickness. The thickness of the finished rock barrier will be verified using methods that are consistent with those presented in Appendix E of the Residential Yards RDR. Dust control during transportation and application, if necessary, will be accomplished by wetting the application site using a water truck. Precautions will be exercised when grading to limit mixing of the base material with the rock barrier.

Areas capped with a rock barrier will be inspected annually for the first two years following remediation to assess whether the barrier has been disturbed. Repairs to the barrier will be made by the Settling Defendants, as needed, if barrier disturbance is linked to its installation and not to the land-use practices of the property owner. Invasion of vegetation will not be considered as a disturbance and, therefore, will not be removed. Areas assessed to exhibit excessive erosion due to the material selected or the method by which it was placed will be mitigated using additional vegetation, runon/runoff controls, or selective placement of rock barrier material if the excessive erosion is not attributable to the land-use practices of the property owner. The selection of erosion control measures will be site-specific. If the inspections indicate that no repairs are required, subsequent maintenance will become the responsibility of the property owner in accordance with the Commercial Properties Warranty (Appendix A). However, if barrier repairs are required in the first year after remediation as a result of erosion or other non-owner related causes, the Settling Defendants will perform the repairs and will be responsible for an additional inspection the following year. If no further problems are identified during the second inspection, future inspection and maintenance will become the responsibility of the property owner.

4.5 DRAINAGE AND GRADING

In general, drainage patterns resulting from final grading of remediated commercial properties will be consistent with current drainage patterns. Some properties may have improved drainage as a result of grading the new material. Existing municipal facilities such as storm sewers or culverts will not be upgraded by the Settling Defendants.

In instances where pre-remediation drainage patterns are inadequate, they will be improved by the Settling Defendants only to the extent required to protect the barrier material. However, where the property owner is willing to invest in drainage improvements, the Settling Defendants will use best efforts to coordinate the remediation with such improvements. In all cases, the cost of remediation will not increase to the Settling Defendants for improvements desired by the owner. The ICP will require that any future developments resulting in increased runoff that could disrupt installed barriers also include provisions to ensure barrier integrity. As noted in the Commercial Properties Warranty (Appendix A), the Settling Defendants will respond to any drainage problems associated with remedial work for a period of two years following remediation. Drainage problems caused by the activities of owners/tenants will not be mitigated by the Settling Defendants.

4.6 SCHEDULE

Commercial properties present within Area I as of December 31, 1993 will be remediated consistent with the schedule for the Residential Yards Element of Work, as presented in the SOW.

5.0 OPERATION AND MAINTENANCE

The ICP developed for the Bunker Hill Superfund Site is expected to accomplish the long-term operations and maintenance requirements for the remediation activities addressed by this RDR. The ICP will designate proper soil handling, pick-up, and disposal methods and will provide guidelines and requirements to ensure the long-term integrity of barriers installed as part of the commercial properties remediation program.

In addition, future transactions involving land currently owned by the Settling Defendants will obligate the purchaser to comply with the ICP or any other barrier installation and maintenance requirements.

6.0 SUMMARY OF PERTINENT REMEDIAL DESIGN INVESTIGATIONS

Soil sampling will be required for many of the commercial properties to establish the required remedial action. Specific remedial action plans will be developed as part of the Residential Areas Annual Remedial Action Work Plans for each commercial property with 1,000 ppm lead or greater in the surface soils. These plans will be developed with owner input and the necessary access agreements prior to construction. As such, additional information for the remedial design phase is not required since specific design details will be developed annually based on the process described herein.

7.0 FUTURE DELIVERABLES (PLANS AND REPORTS)

The following described plans and reports will be submitted to IDHW and/or EPA for the Commercial Properties Element of Work at the Site.

7.1 GENERAL PROJECT MANAGEMENT

7.1.1 Project Management Monthly Reports

Monthly progress reports submitted pursuant to Section XI of the Consent Decree will include a section on the Commercial Properties Element of Work when applicable. The commercial properties section will include a minimum of the following information:

- General description of the work undertaken during the reporting period.
- Specific activities/tasks undertaken during the reporting period, and expected to be undertaken during the next reporting period.
- Identification of issues and actions that have been or will be taken to resolve the issues.
- Status of the commercial property remediation schedule and any proposed schedule changes.

7.1.2 Technical Memoranda

Technical memoranda are the mechanism for requesting material modification of plans, designs, and schedules. Technical memoranda will not be prepared or required for non-material field changes that have been approved by the agencies. In the event that the Settling Defendants determine that modification of an approved plan, design, or schedule is necessary, the Settling Defendants will submit a written request for the modification to the Agency Project Coordinators. The written request will include, but not be limited to, the following information:

- General description of and purpose for the modification.
- Justification, including necessary calculations (if any), for the modification.
- Actions to be taken to implement the modification, including any actions related to subsidiary documents, milestone events, or activities affected by the modification.
- Recommendations.

7.2 REMEDIAL DESIGN

No further design submittals beyond this RDR are required for the Commercial Properties Element of Work.

7.3 REMEDIAL ACTION

Commercial properties will be remediated as part of the overall remedial actions for a Reasonably Segregable Area of Area I. Specific remedial actions for commercial properties will be developed as part of the Residential Areas Annual Remedial Action Work Plans, as described below.

7.3.1 Residential Areas Annual Remedial Action Work Plans

Each year the Settling Defendants will submit to the appropriate agencies a Residential Areas Annual Remedial Action Work Plan outlining the proposed Area I remediation activities to be completed during the construction season (barring unusual weather, the construction season will generally occur from mid-June to mid-October). Included in these work plans will be details on the remediation activities planned for commercial properties. The Residential Areas Annual Remedial Action Work Plan will be submitted by April 15 of each year. At a minimum the work plans will include:

- Commercial properties to be sampled during the current year to assess remediation needs for the following year (see discussion below).
- Scope of the proposed remediation; i.e., the number of commercial properties to be remediated and a map showing their locations.
- Sampling data.
- Estimated remediation schedule for the construction season.
- Any deviations or changes from the guidelines and procedures outlined in the Commercial Properties RDR.
- Plan for coordinating, integrating, and communicating with the various agencies.
- Description of deliverables and milestones during the construction season.
- An overall description of Work to be performed.
- Technical approach for undertaking, monitoring and completing the Element of Work.
- Construction O&M requirements.
- QA measures.
- Additional Health and Safety measures.

Commercial properties will be sampled according to the remediation schedule developed by the Settling Defendants. The commercial property sampling program will provide information to support preparation of the commercial property portions of the Residential Areas Annual Remedial Action Work Plans for Area I. The sampling program will be designed so that the commercial properties designated for remediation will be sampled in the year immediately prior to the remediation year. For example, the commercial properties designated for remediation in the 1995 remedial action work plan will have been sampled in 1994. Sampling of commercial properties will be conducted according to Section 3.1 of this RDR, and sample analysis will be conducted according to the

Sampling and Analysis Plan included as Appendix B of the Residential Yard RDR.

The analytical results of the sampling program will be provided to the agencies as soon as is practicable after the results have been received and validated by the Settling Defendants. The data will be provided in a format acceptable to the agencies.

7.3.2 Health and Safety

Health and safety aspects pertaining to commercial properties within each Reasonably Segregable Area will be addressed in the corresponding Residential Areas Annual Remedial Action Work Plan. Such aspects include descriptions of monitoring activities to be undertaken during remediation of commercial properties.

7.3.3 Annual Construction Completion Report

Construction activities completed during any construction season will be summarized in the Annual Construction Completion Reports. These reports will contain a complete listing and description of construction activities associated with the Commercial Properties Element of Work that were completed during the previous construction season. These reports will be submitted to the agencies within 60 days after the construction activities for that construction season are completed. These reports will include the final site plans signed by the Settling Defendants' Project Coordinator.

8.0 CERTIFICATION OF COMPLETION OF REMEDIAL ACTION

Certification of the completion of remedial action in a Reasonably Segregable Area is defined as the EPA, in consultation with IDHW, acknowledging the achievement of Performance Standards (as outlined in Section 1.2) for that portion of the remedial action.

Commercial property certification will be conducted on a Reasonably Segregable Area basis. Specifically, Residential Area Annual Remedial Action Work Plans will be developed with the goal of remediating as many of the Area I commercial properties located within one or a group of Reasonably Segregable Areas as practical during one construction season. Reasonably Segregable Areas of Area I are defined in the SOW and the Consent Decree.

The Performance Standards for commercial properties will considered to be achieved when all commercial properties with lead concentrations of 1,000 ppm or greater in surface soils within each Reasonably Segregable Area have been remediated in accordance with this RDR and when all clean soil covers and rock barriers in that Reasonably Segregable Area have been verified as being of the appropriate thickness. When the Settling Defendants believe that the Performance Standards for a Reasonably Segregable Area have been met, they will submit a Completion of Remedial Action Certification Report to EPA and IDHW for review and approval. Barrier thickness certification will be accomplished using methods consistent with those presented in Appendix E of the Residential Yards RDR.

9.0 REFERENCES

Administrative Order On Consent For 1991 Removal Action At The Bunker Hill Superfund Site (AOC) 1991 and 1992 Dust Control Work Plans

CH2M HILL, 1990. CH2M Hill, Phase II Remedial Investigation Data Summary Report for the Bunker Hill CERCLA Site Populated Areas RI/FS, September 1990

E&E, 1989. On-Scene Coordinator's Report for: Bunker Hill Residential Soil Removal Action-1989 Silver Valley, Idaho (Kellogg, Smelterville, Page and Wardner) TDD T10-8910-005, Report prepared By: Ecology and Environment, Inc.

TABLES

TABLES

TABLE 3-1
DETERMINATION OF REQUIRED BARRIER THICKNESS

TYPE 1 (SENSITIVE USE) COMMERCIAL PROPERTIES

If Interval Equals or Exceeds Action Level		If Interval Less than Action Level		Remediation Depth
0 - 1"		1 - 6", 6 - 12"		6"
1 - 6"		0 - 1", 6 - 12"		6"
6 - 12"	AND	0 - 1", 1 - 6"	THEN	12"
12 - 18"		0 - 1", 1 - 6", 6 - 12"		NO REMEDIATION
0 - 1", 1 - 6"		6 - 12"		6"
1 - 6", 6 - 12"		0 - 1"		12"
NONE		0 - 1", 1 - 6", 6 - 12"		NO REMEDIATION

TYPE 2 (NON-SENSITIVE USE) COMMERCIAL PROPERTIES

If Interval Equals or Exceeds Action Level		If Interval Less than Action Level		Remediation Depth
0 - 1"		1 - 6"		6"
1 - 6"	AND	0 - 1"	THEN	6"
6 - 12"		0 - 1", 1 - 6"		NO REMEDIATION
NONE		0 - 1", 1 - 6"		NO REMEDIATION

FIGURES

FIGURES

10/93 5104-1.DWG

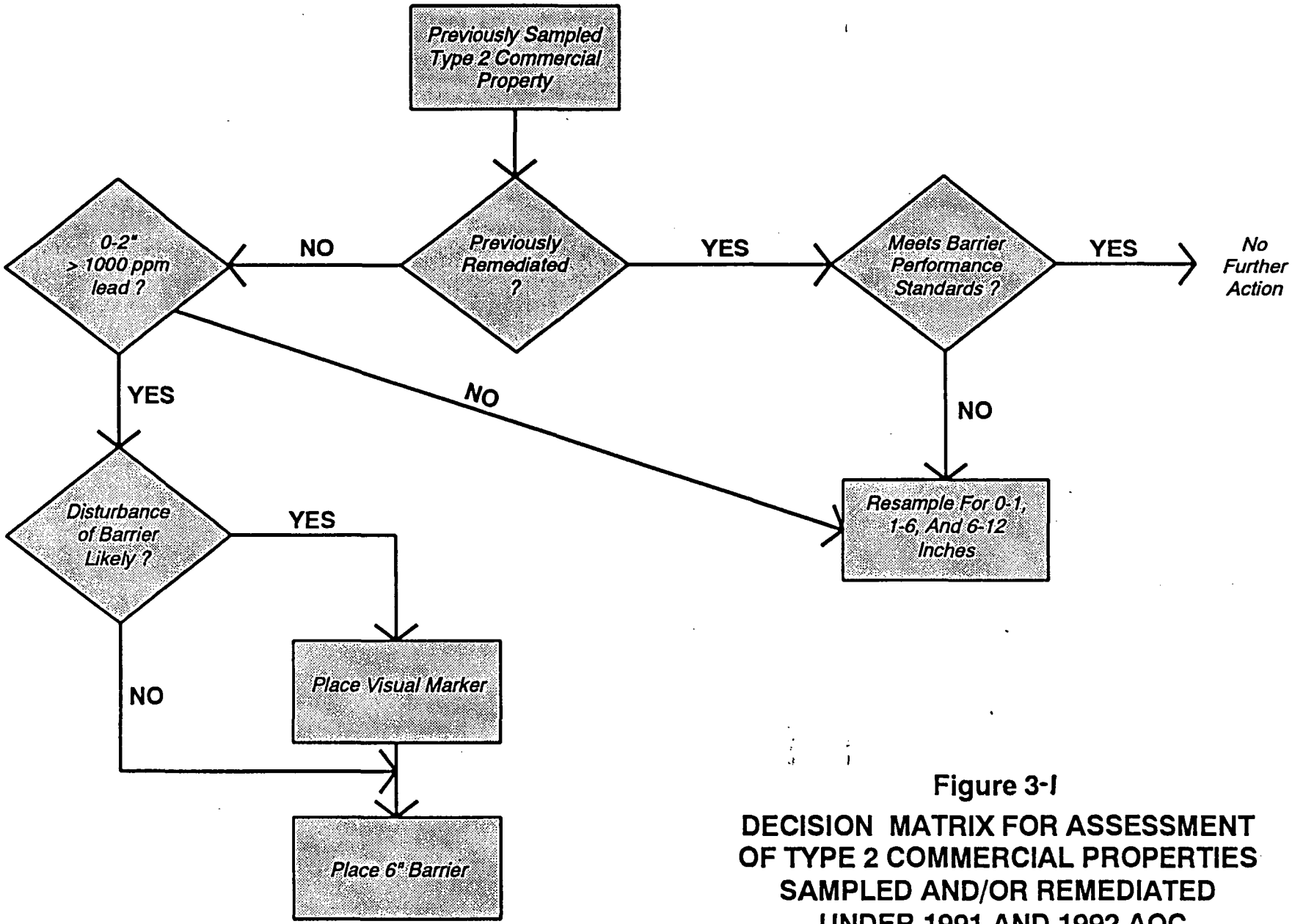

Figure 3-I

DECISION MATRIX FOR ASSESSMENT OF TYPE 2 COMMERCIAL PROPERTIES SAMPLED AND/OR REMEDIATED UNDER 1991 AND 1992 AOC

APPENDIX A

APPENDIX A

COMMERCIAL PROPERTIES WARRANTY

WARRANTY

ASARCO Incorporated, Hecla Mining Company and Sunshine Mining Company ("the Companies") agree to replace any sod, lawn, trees, shrubs or other landscaping removed or damaged during the remediation of your commercial property, which is located at _____, _____, Idaho. The Companies will water and fertilize your remediated property as necessary from the time it is replanted until October 15 of the same year. The Companies will not mow any part of the property, or provide any other gardening or landscaping services not outlined in this Warranty. The Companies also agree to correct any drainage problems and associated property damage that result from the remediation and occur within two years of the completion of the remediation of your property.

The Companies guarantee that any sod, lawn, trees and shrubs will survive for one calendar year after the remediation of your property is completed. Sod, grass, trees and shrubs that die within one calendar year, as a result of the excavation and remediation activities, will be replaced by the Companies. If the sod, lawn, trees, or shrubs die because you or your tenant do not water or otherwise take care of them, or because of damage caused by any other person, the Companies will not repair the damage or be held responsible.

The Companies will return to your property approximately one year after the remediation to see if sod, landscaping, or rock barrier material need replacing under the terms of this Warranty. After this follow-up inspection and any replacement of sod, landscaping, or rock barrier material, if needed, the Companies will have no further responsibility for the maintenance of your sod, trees, shrubs, other landscaping, or rock barrier.

At the time of the landscaping follow-up inspection, the Companies will also look for any signs of poor drainage. At any time during the two year period after your property is remediated, you may notify the Companies or Panhandle Health District of any drainage problems that you believe were caused by the remediation, and the Companies will respond.

Areas that have been reseeded will be inspected by the Settling Defendants after one year to characterize progress toward achievement of the 85 percent cover criterion. If this criterion has been achieved, no addition inspections will occur and maintenance of the revegetated areas will become your responsibility. If the 85 percent cover criterion has not been achieved, the Settling Defendants will inspect your revegetated areas once per year for the next two years, or until the criterion has been achieved. If, after three years following reseeding, the 85 percent cover criterion has not been achieved, the Settling Defendants will reseed the area or take other appropriate measures. If weeds are observed in reseeded areas prior to attainment of the cover criterion, they will be eliminated by the Settling Defendants. After attainment of the cover criterion, weed elimination will be your responsibility.

If there is a dispute about whether any damage to landscaping or drainage problems are the responsibility of the Companies to replace, the Companies will work with you to see if satisfactory arrangements can be made. If we cannot come to an agreement, we agree to follow the arbitration procedure established in the Bunker Hill Superfund Site Residential Yard Remedial Design Report.

_____

Companies' Representative

_____

Estimated dates of commercial property remediation

I have read this Warranty and understand it.

_____

Owner

_____

Date

An Institutional Controls Program (ICP) has been developed pursuant to the Consent Decree governing the cleanup of this property. The purpose of the ICP is to ensure that excavations, building development construction, renovation, and grading within the Bunker Hill Superfund Site do not compromise barriers and do not expose contaminated materials. To that end, no person shall excavate a non-remediated site nor breach a protective barrier, for both exterior and interior projects, without first obtaining a permit.

Permits may be obtained by contacting:

Panhandle Health District
Environmental Health Program
114 W. Riverside Avenue
Kellogg, Idaho 83837-2351
Phone (208) 783-0707

McCulley
Frick &
Gilman, inc.

Austin Office
8900 Business Park Drive
Austin, TX
78759-7439
512/338-1667
Fax: 338-1331

San Francisco Office
5 Third Street
Suite 400
San Francisco, CA
94103-3205
415/495-7110
Fax: 495-7107

Boulder Office
737 29th Street
Suite 202
Boulder, CO
80303-2317
303/447-1823
Fax: 447-1836

Wallace Office
524 Bank Street
Suite 207
Wallace, ID
83873
208/556-6811
Fax: 556-7271

Missoula Office
Hammond Arcade Building
101 South Higgins Avenue
Suite 12
Missoula, MT
59802
406/728-4600
Fax: 728-4698

Seattle Office
3400 188th Street
Suite 400
Lynnwood, WA
98037-4708
206/778-8252
Fax: 771-8842